

## Weekly report (2017-09-25 ----- 2017-10-01)

Oct 1<sup>st</sup>, 2017, 20:04 pm

### 1. Progress

Table 1. Progress

| Tasks                       | DUE DATE                   | IN PROGRESS   | Finished  |
|-----------------------------|----------------------------|---|---|
| Dimensionality<br>reduction | Oct 8 <sup>th</sup> , 2017 | 1. Data module<br>2. K-nn module<br>(LargeVis/efanna)<br>3. LargeVis/t-SNE/bh-SNE | Data module<br>K-nn module<br>(LargeVis/efanna) |

### 2. Programming

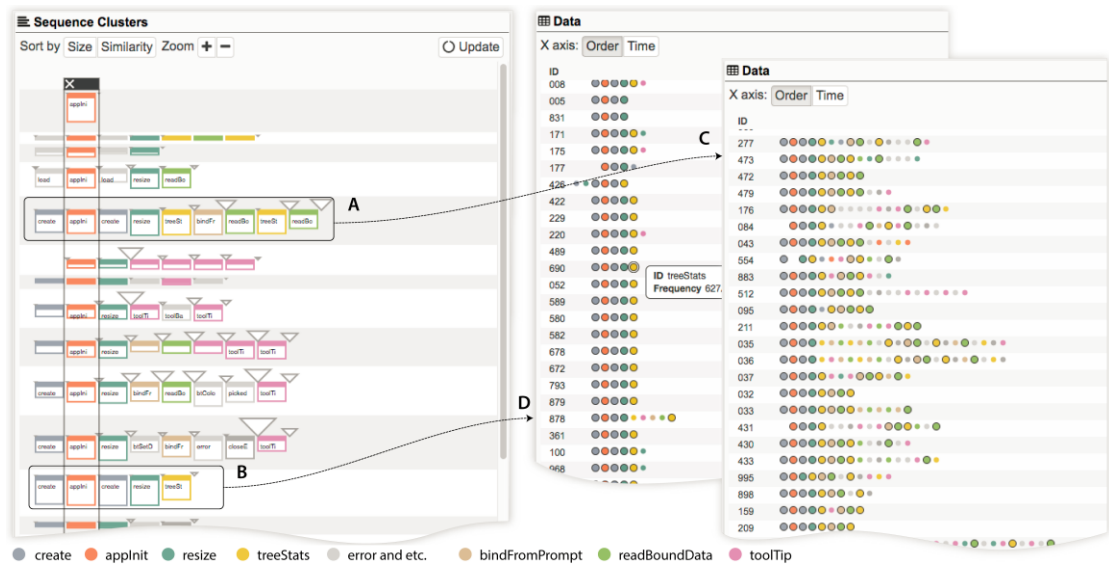
Finished the module of k-nn, when we need to construct a k-nn graph, we only need to input a parameter and then we can choose to use LargeVis' k-nn or Efanna's k-nn.

The last module is in the process.

### 3. Research

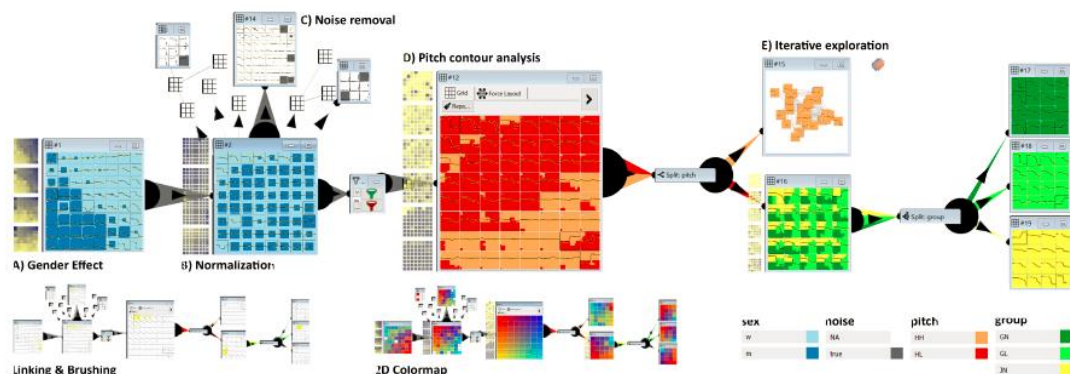
#### 3.1 paper reading

1. Sequence Synopsis: Optimize Visual Summary of Temporal Event Data



In this paper, the authors propose a novel visualization technique based on the minimum description length (MDL) principle to construct a coarse-level overview of event sequence data. And use LSH(Locality Sensitive Hashing) to accelerate the MDL by making an pre-merge. By doing this, it can be observed that the authors can reduce 95% to 99% running time of MinDL with the help of LSH. I think it's incredible and it is a fantasy idea.

## 2. SOMFlow: Guided Exploratory Cluster Analysis with Self-Organizing Maps and Analytic Provenance



In this paper, the authors use Self-Organizing Maps (SOM) to analyze time series data and offering the analyst a visual platform to analyze intermediate results, adapt the underlying computations, iteratively partition the data, and to reflect previous analytical activities.

## 4. Plan

The last module is in the process, we plan to integrate the three methods into one project and finish it before next week. This week, Minfeng Zhu discussed with me and proposed an idea concerned with bh-SNE, I will try it in next week and test its performance.